

REMARKS/ARGUMENTS

Applicant thanks Examiner for the detailed Office Action dated April 4, 2006. In response to the issues raised, the Applicant offers the following submissions and amendments.

Amendments

The Abstract has been amended to remove 'claim-like' language such as 'comprising'.

Claim 2 has been cancelled and its features incorporated into amended claim 1. Likewise, claims 20 and 39 have been cancelled and their features incorporated into amended claims 19 and 38 respectively.

Accordingly the amendments do not add new matter.

Abstract

As discussed above, we believe that the amended Abstract provides a clear and concise description of the disclosure in compliance with 37 CFR 1.72.

Double Patenting

Claims 1-54 stand provisionally rejected as not patentably distinct from claims 1-42 and 44-54 of USSN 10/773,202 in view of US 5,841,452 to Silverbrook in further view of US 5,710,070 to Chan. USSN 10/773,202 is the present application and we therefore assume the Examiner intended to cite a different co-pending application. Our submissions regarding this rejection are therefore reserved pending the Examiner's response.

Claims – 35USC§103

Claims 1 to 54 stand rejected as obvious in light of US 5,841,452 to Silverbrook. The Applicant disagrees. The cited reference does not teach all the elements of amended independent claims 1, 19 and 38, and fails to anticipate the present invention.

The present invention overlays the heater electrodes with the CMOS metalisation layers so that the electrodes can be as large as possible while maintaining the highest nozzle density the drive circuitry and nozzle chamber will allow. To keep lower resistive losses between the metallization layers and the heater electrodes, the vias are deposited so that they have a cross sectional area that is at least half the surface area of one side of the heater. Lower resistive losses improve the efficiency of the heater elements and reduce the heat dissipated into the wafer substrate.

The '452 reference is directed to improving nozzle density with a printhead chip that draws ink in from the back and out of the front. Feeding ink to the nozzle structures from the side of the chip requires the precise and laborious alignment of an ink feed component against the side of an ink ejection component. The '452 reference does not recognize the benefits of suspending the heater element in the chamber and does not suggest that the electrodes should be as large as possible and the vias cover at least half the surface area of one side of the heater. In fact, the mask shown in Fig. 74B of the citation shows that the vias 413 are plainly less than half the surface area of one side of the heater element.

Accordingly, we submit that the disclosure of '452 fails to render amended claims 1, 19 and 38 obvious. Furthermore, the additional references cited against the claims depending from the independent claims, also fail to teach or suggest this combination of claim elements.

It is respectfully submitted that the Examiner's §103 rejection has been successfully traversed. Accordingly, favorable reconsideration is courteously solicited.

Very respectfully,

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